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A Rare Case of Total Left Lung Collapse Due To Endo-Bronchial Tuberculosis

Dr SRIKANTI RAGHU M.D
PROFESSOR AND HOD OF DEPT. OF PULMONARY MEDICINE, GUNTUR MEDICAL COLLEGE, GUNTUR
SUPERINTENDENT OF GOVERNMENT HOSPITAL FOR CHEST AND COMMUNICABLE DISEASES, GUNTUR.

Dr. SIDDAVALI CHAGALAMARRI,*FINAL YEAR POST GRADUATE, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.*

Dr. V. PRATAPA REDDY M.D.,*CIVIL ASSISTANT SURGEON, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.*

Dr. V. THANUJA SREE
FINAL YEAR POST GRADUATE, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.

Dr. A. DIMPLE NIKHITA
FINAL YEAR POST GRADUATE, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.

Dr. D. BALAMANI RATNAM, *FINAL YEAR POST GRADUATE, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.*

Dr. N. UTHARA
FINAL YEAR POST GRADUATE, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.

Dr. S. KALAIVANI
FINAL YEAR POST GRADUATE, DEPARTMENT OF POLMONARY MEDICINE,GUNTUR MEDICAL COLLEGE, GUNTUR.

ABSTRACT:
INTRODUCTION: *Endo-bronchial tuberculosis(TB) occurs in about 10 – 40% of patients with active tuberculosis .Most cases of endo-bronchial TB occurs in less than 40yrs of age.*
Endobronchial tuberculosis is one of the rare types to diagnose and evaluate.
CASE REPORT: *A 27 years old female came with complaint of left sided chest pain of one month duration . She completed ATT course one year back on sputum basis. Examination revealed signs of collapse. Chest radiography showed homogenous opacity of left lung with ipsilateral mediastinum shift and contralateral hyperinflation. CT CHEST showed complete collapse of left lung. Sputum AFB and CBNAAT were negative. Bronchoscopy revealed narrowed, erythematous changes in left main bronchus. Bronchial washings negative for AFBstaining and culture. Endo-bronchial biopsy showed chronic non granulomas inflammation.*
Balloon Bronchoplasty was done and patient started ATT. Lung showed complete expansion in follow up radiographs.
DISCUSSION: *The most common site of involvement is right upper lobe and right main bronchus and causes segmental or lobar collapse. But our case involves left principal bronchus and leads to total left lung collapse. Endo bronchial TB divided into seven subtypes based on bronchoscopic appearance. Most common is actively caseating type. Our patient had edematous-hyperemic type. Patient with these type have poor prognosis.*
CONCLUSION: *In case of complete lung collapse though rare consider endobronchial tuberculosis as one of the differential diagnosis, evaluate bronchoscopically for early intervention and prevent complications.*

KEYWORDS: *collapse, endobronchial tuberculosis, bronchoscopy.*

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I. INTRODUCTION:-

Endo-bronchial tuberculosis(TB) occurs in about 10 – 40% of patients with active tuberculosis .Most cases of endo-bronchial TB occurs in less than 40yrs of age. Females are more commonly infected than males because of implantation of organisms from infected sputum occurs easily in women who tend to voluntarily suppress their cough because of socio- cultural and cosmetic reasons(1,2,3). Symptoms of Endo bronchial TB are barking cough reported in majority of patients.

Dyspnea, weight loss, fever, haemoptysis, generalized weakness, chest pain may also present(4). Bronchorrhea reported in rare cases. Barking cough does not respond to even antitussive medications.This is one of challenge to diagnose endobronchial TB in many countries.

Many diagnostic tests available now a days , but endo bronchial TB causes major morbiditity like bronchostenosis, collapse of lobes of lung etc. Positivity of sputum examination is low yield (15- 20%) because of expectoration of sputum is difficult due to mucus entrapement by proximal granulation tissue(4). However, sputum is negative and chest xrays shows normal in 10 to 20% of pts (1,2,3,4,5,6) then will go for computerized tomography. CT detecting focal bronchial lesions, but it is inaccurate in predicting whether lesion is endo brochial, submucosal or outside airway(10,11). Bronchoscopy is the gold standard for detecting endo bronchial TB. It detects even in some normal chest xrays cases also(12,13).My case had a total left lung collapse. Endo bronchial tuberculosis (TB) is a rare cause of total lung collapse.

II. CASE REPORT:-

A 27 years old female came to opd of pulmonology department GHCCD, Guntur with complaint of left sided chest pain of one month duration . She completed ATT course one year back on sputum basis. Now general physical examination was normal. Respiratory examination revealed decreased respiratory movement, signs of decreased lung volume and absent breath sounds over left hemithorax. Chest xray showed RT upper zone infiltrates one year ago at the time of initiation of ATT (Fig.no1) . Chest radiography showed homogenous opacity of left lung with ipsilateral mediastinum shift and contralateral hyperinflation(Fig.no 2) . CT CHEST showed complete collapse of left lung(Fig no 3). Laboratory investigations showed Sputum AFB and CBNAAT to be negative. Bronchoscopy revealed narrowed left main bronchus (> 70% of luminal obstruction seen), endobronchial mucosal erythematous changes in left main bronchus(Fig no.4). Bronchial washings CBNAAT negative for mycobacterium tuberculosis , Bronchial washing negative for AFB staining and culture. Endo-bronchial biopsy showed chronic non granulomas inflammation. Balloon Bronchoplasty was done and patient started ATT in view of edematous hyperemic type of endobronchial TB. Lung showed complete expansion in follow up radiographs (Fig no 5).

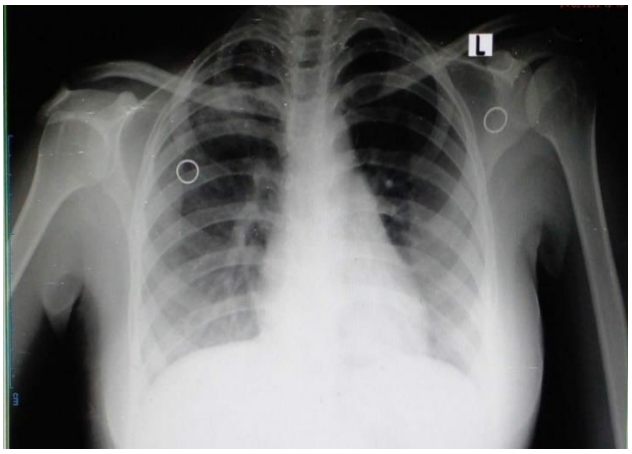

Fig no1 Chest x-ray PA view 1 year ago (at the timeof diagnosis of PTB based on sputum.

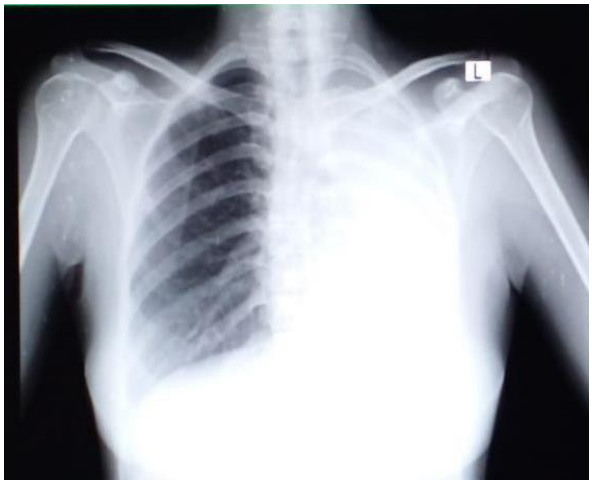

Fig no.2 :chest xray PA view showing left sided homogenous opacity.

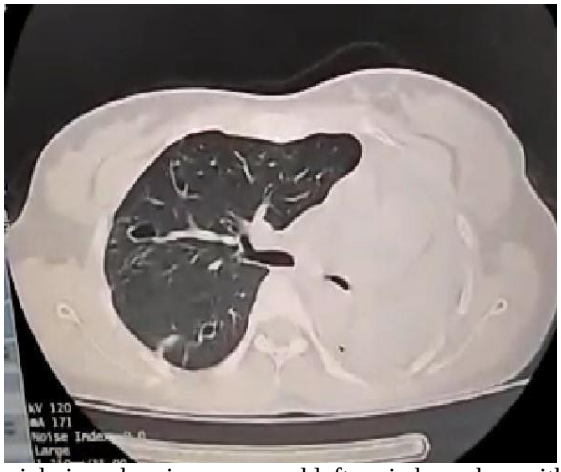

Fig no.3 CT chest axial view showing narrowed left main bronchus with left lung collapse.

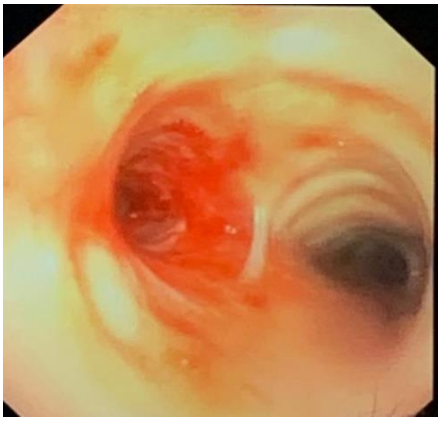

Fig no.4 bronchoscopic view that left main bronchus stenosis

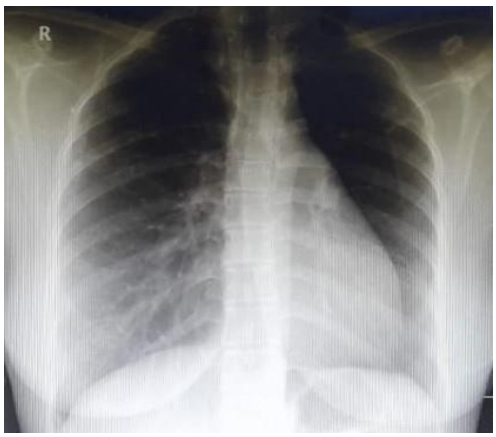

Fig no.5 post bronchoplasty procedure showing completely expanded lung

III. Discussion:-

Endo bronchial TB defined as tuberculous infection of the tracheobronchial tree. Incidence is more in Young female . Common symptoms of endo-bronchial TB are cough with expectoration, haemoptysis, dyspnea and wheeze. My case had complaint of left sided chest pain. The most common site of involvement are right upper lobe and right main bronchus. But my case involves left principal bronchus with left sided total lung collapse which is rare.

Endo-bronchial TB divided into seven subtypes based on bronchoscopic appearance. Most common is actively caseating type. Our patient had edematous hyperemic type of endo bronchial TB. Patient with this type have poor prognosis ,as 60% of cases develop fibro-stenosis and 30% progress complete obstruction of bronchial lumen. Ozkaya et al .explained positivity of broncho alveolar lavage for mycobacterium tuberculosis , Highest positivity found in granular type ,lowest seen in fibrostenosis and nonspecific bronchitic subtypes. Positivity rate of bronchoscopic biopsy (30-84%) higher than sputum sample (16-53%), hence bronchoscopy is still an important diagnostic procedure(19).

Jung et al. explained Extra pulmonary tuberculosis patients undergo bronchoscopy ,broncho stenosis seen in 29.6% patients showed >1/3 lumen obstruction and 14.5 % patients seen >2/3 obstruction . After 4 months follow up 20.7% patients showed improvement with ATT(20).

Bronchial stenosis can be treated with balloon dilatation, stent insertion, laser and cryo-surgery.

Bronchoscopic guided Baloon dilatation treatment done for this patient and ATT also started. patient showed improvement in following x-rays. With complete aeration of left lung.

Conclusion:- : In case of complete lung collapse though rare consider endobronchial tuberculosis as one of the differential diagnosis, evaluate bronchoscopically for early intervention and preventcomplications.

KEYWORDS: - collapse, endo bronchial tuberculosis, bronchoscopy

References:

[1]. Lee JH, Park SS, Lee DH, Shin DH, Yang SC, Yoo BM. Endobronchial tuberculosis: clinical and bronchoscopic features in 121 cases. Chest 1992;102:990-4.
[2]. Chung HS, Lee JH. Bronchoscopic assessment of the evolution of endobronchial tuberculosis. Ch 3)Auerbach O. Tuberculosis of trachea and major bronchi. Am Rev Tuberc 1949;60:604-20.
[3]. Ip MS, So SY, Lam WK, Mok CK. Endobronchial tuberculosis revisited. Chest 1986;89:727-30.
[4]. McIndoe RB, Steele JD, Samson PC, Anderson RS, Leslie GL. Routine bronchoscopy in patients with active pulmonary tuberculosis. Am Rev Tuberc 1939;39:617-28.
[5]. Stone MJ. Clinical aspects of endobronchial tuberculosis. Dis Chest 1945;11:60-71.
[6]. Seiden HS, Thomas P. Endobronchial tuberculosis and its sequelae. Can Med Assoc J 1981;124:165-9.
[7]. Pierson DJ, Lakshminarayan S, Petty TL. Endobronchial tuberculosis. Chest 1973;64:537-9.
[8]. Volckaert A, Roels P, Van Der Niepen P, Schandevyl W. Endobronchial tuberculosis: report of three cases. Eur J Respir Dis 1987;70:99-101
[9]. Lee KS, Kim WS, Hwang SH, Kim PN, Lee BH. Endobronchial tuberculosis: CT features. J ComputAssist Tomogr 1991;15:424-8.
[10]. Naidich DP, Lee JJ, Garay SM, McCauley DI, Aranda CP, Boyd AD. Comparison of CT and fiberoptic bronchoscopy in the evaluation of bronchial disease. AJR Am J Roentgenol 1987;148: 1-7.
[11]. Schmidek HH, Hardy MA. Pulmonary tuberculosis with normal chest radiographs: report of eight cases. Can Med Assoc J 1967;67:178-80.
[12]. Husen L, Fulkerson LL, Del Vecchio E, Zack MB, Stein E. Pulmonary tuberculosis with negative findings on chest-X ray films: a study of 40 cases. Chest 1971;60:540-2.
[13]. Kato R, Kakizaki T, Hangai N, Sawafuji M, Yamamoto T, Kobayashi T, et al. Bronchoplastic procedures for tuberculous bronchial stenosis. J Thorac Cardiovasc Surg 1993;106:1118- 21.
[14]. Agerton T, Valway S, Gore B, Pozsik C, Plikaytis B, Woodley C, et al. Transmission of a highly drug-resistant strain [strain w1] of Mycobacterium tuberculosis: community outbreak and nosocomial transmission via a contaminated bronchoscope. JAMA 1997;

278:1073-7.
[15]. World Health Organization. Guidelines for the prevention of tuberculosis in health care facilities in resource-limiting settings. Geneva: World Health Organization; 1999.p.1-51.
[16]. Centers for Disease Control and Prevention. Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care facilities, 1994. MMWR 1994;43:1-132
[17]. Salkin D, Cadden AV, Edson RC. The natural history of tuberculosis tracheobronchitis. Am RevTuberc 1943;47: 351-69
[18]. Ozkaya S, Bilgin S, Findik S, Kök HC, Yuksel C, Atıcı AG: Endobronchial tuberculosis: histopathological subsets and microbiological results. Multidiscip Respir Med. 2012, 7:34. 10.1186/2049-6958-7-34
[19]. Jung SS, Park HS, Kim JO, Kim SY: Incidence and clinical predictors of endobronchial tuberculosis in patients with pulmonary tuberculosis. Respirology. 2015, 20:488-495. 10.1111/resp.12474.
[20]. Smith LS, Schillaci RF, Sarlin RF. Endobronchial tuberculosis. Serial fiberoptic bronchoscopy and natural history. Chest 1987;91:644-7.